GDOT ORD-CE Workflow For Creating General (Non-Alignment) Sheets

USER INTRODUCTION:

These are the GDOT Roadway instructions for creating Sheet Models for plotting of General Sections. This includes instructions on how to place an Excel spreadsheet into the Design Model for a Section .dgn file. Each Section is included in this document, but a lot of the procedures are the same, so the concept and basic steps are the same. As more Section Workflows are established more specific instructions for each Section will be expanded upon as necessary.

If you have issues, questions or comments, please contact the Solution Center:

solutioncenter@dot.ga.gov

404-

CREATING THE SECTION_01 .dgn FILE:

! These instructions need to be expanded to include the Cell placements and scaling. Also, the Cells and Texts need to be updated to ORD-CE

Create The Base Items –

Create The .dgn File, If It Hasn't Been Already:

1. Create the .dgn file, #######_01.dgn
2. Set the Annotation Scale: Full Size 1=1

Bring In The Required Reference Files:

1. Attach the following Reference files:
    a. #######CORD_[route-street-descriptor].dgn – as many as needed…
    b. #######DRNG.dgn
    c. #######ENVE.dgn
    d. #######MAIN.dgn
    e. #######PROP.dgn
    f. #######REQD.dgn
    g. #######TOPO.dgn
    h. #######UTLE.dgn
2. Set the Levels via the GDOT PDF Plotting > Setting Default Levels > 01 Default – Need the CORD Levels added to the 01Cover_ORD-CE_Default.txt file
3. Fit View
4. Zoom In to the area to place on the Construction Cover Sheet
5. Save Settings <Ctrl + F>
6. Save <Ctrl + S>

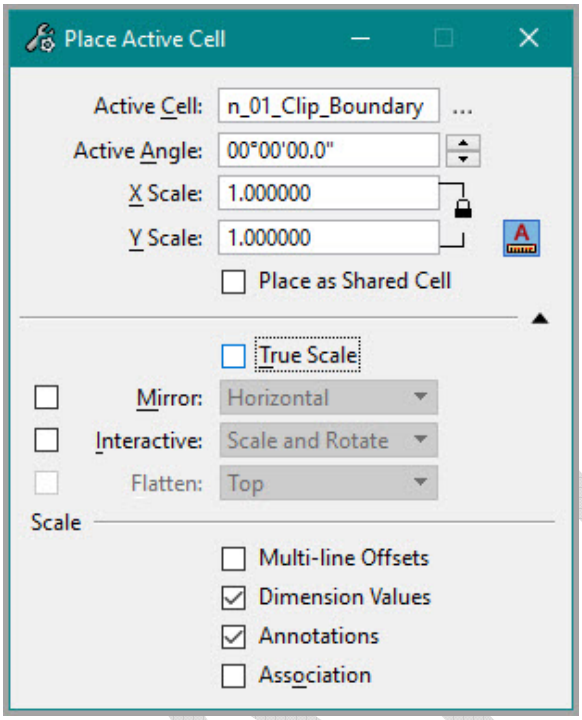
Create The Sheet Model –

Place Cell For Map Area:

Option #1

1. Rotate the View as necessary – see Option #2 to use the Cell 'Section_01_Clip_Boundary' as a guide for the Rotation
2. Go to OpenRoads Production > Drawing > Placement > Place Active Cell

3. The Place Active Cell dialog appears – verify that True Scale is unchecked

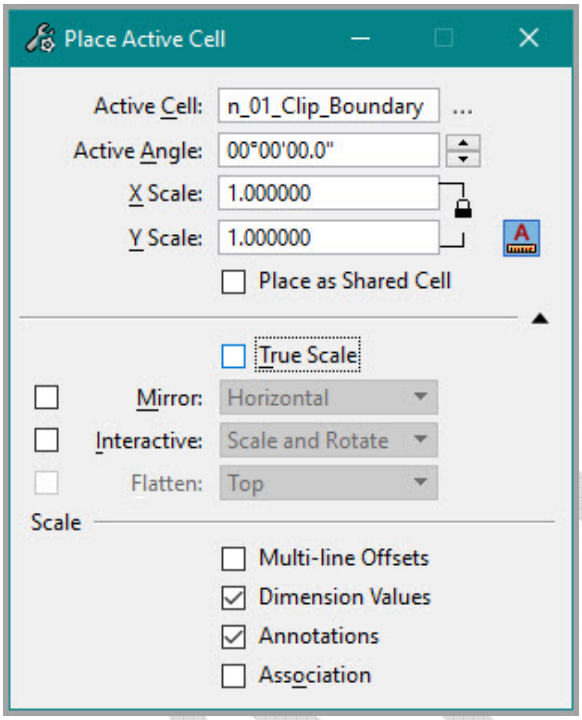


4. Browse to the Cell Library: GDOT-GN-Sheets.cel
5. Select Cell: Section_01_Clip_Boundary and make It Active
6. Adjust the Annotation Scale as necessary for the Cell to fit the Map area
7. Place the Cell 'Section_01_Clip_Boundary' in the Default Model
8. Adjust it so the Map area is within the Cell outline
9. Rotate the View as necessary
10. Move the View as necessary

Option #2

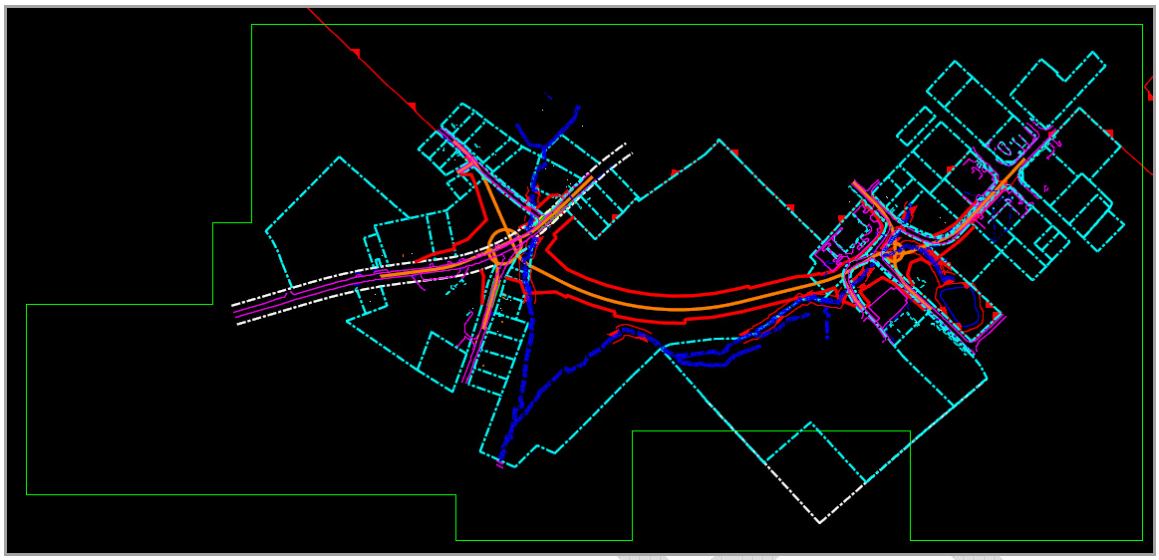
1. Go to OpenRoads Production > Drawing > Placement > Place Active Cell

2. The Place Active Cell dialog appears – verify that True Scale is unchecked



3. Browse to the Cell Library: GDOT-GN-Sheets.cel
4. Select Cell: Section_01_Clip_Boundary and make It Active
5. Adjust the Annotation Scale as necessary for the Cell to fit the Map area
6. Place the Cell 'Section_01_Clip_Boundary' in the Default Model in the area of where you want to Clip out for the Map
7. Rotate the Cell as necessary
8. Move the Cell as necessary
9. Continue to adjust the Cell's location until it is in the correct location

10. Rotate the View so the Cell 'Section_01_Clip_Boundary' is Rotate to 0° to the X-axis



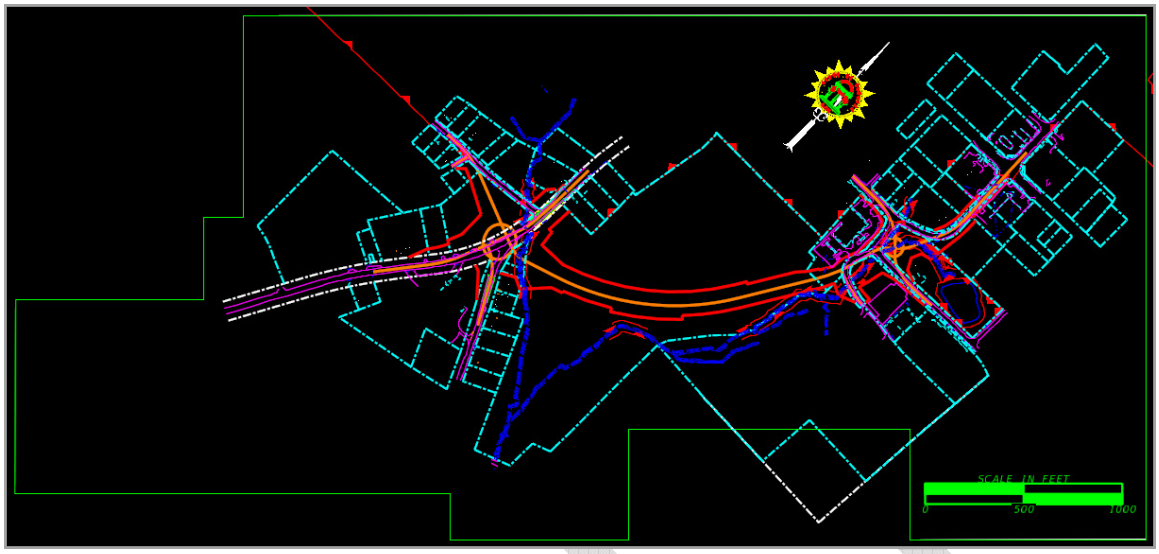
Place The North Arrow Cell:

1. Make sure the View is Unrotated, so North is straight up
2. Go to OpenRoads Production > Drawing > Placement > Place Active Cell
3. Browse to the Cell Library: GDOT-GN-Sheets.cel
4. Select Cell: COVNOR-CE and make It Active
5. Place it within the 'Section_01_Clip_Boundary' Cell

Place The Scale Cell:

1. Make sure the View is Rotated so the 'Section_01_Clip_Boundary' Cell is aligned with the X-axis
2. Go to OpenRoads Production > Drawing > Placement > Place Active Cell
3. Browse to the Cell Library: GDOT-GN-Sheets.cel
4. Select the Scale Graphic Bar Cell that correlates with the Annotation Scale you have select above, in this example: 500C-CE and make It Active

5. Place it within the 'Section_01_Clip_Boundary' Cell



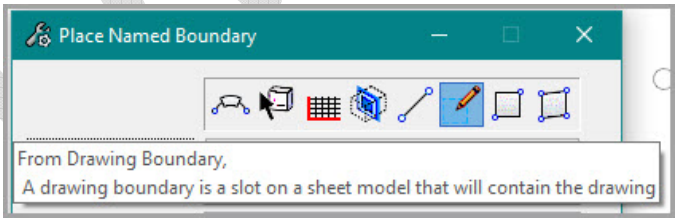
6. Save Settings <Ctrl + F>
7. Save <Ctrl + S>

Place The Location Sketch:

This section to be added soon…..

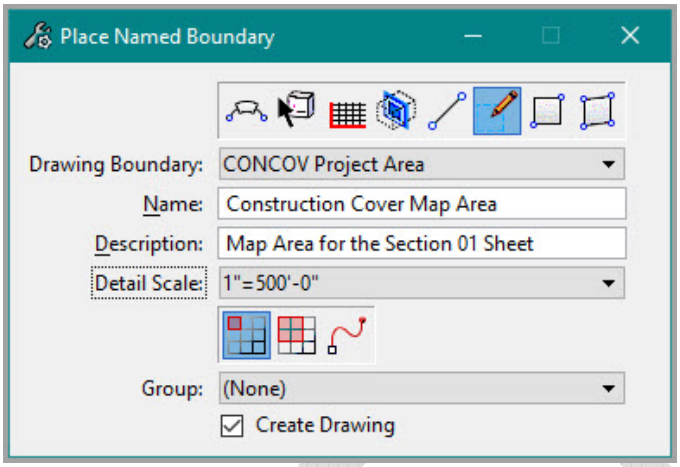
Place Named Boundary To Create The Sheet Models To Plot:

1. Set the Level to Draft_Named_Boundary
2. Go to OpenRoads Drawing Production > Drawing Production > Named Boundary > Place Named Boundary
3. The Place Named Boundary dialog appears
4. Select the From Drawing Boundary icon



5. Fill out the following –
    a. Drawing Boundary: CONCOV Project Area
    b. Name: Construction Cover Map Area
    c. Description: (suggestion like – Map Area for the Section 01 Sheet)
    d. Detail Scale: [Pick the size that fits the area you want on the Sheet]
    e. Select the icon: Place One Named Boundary

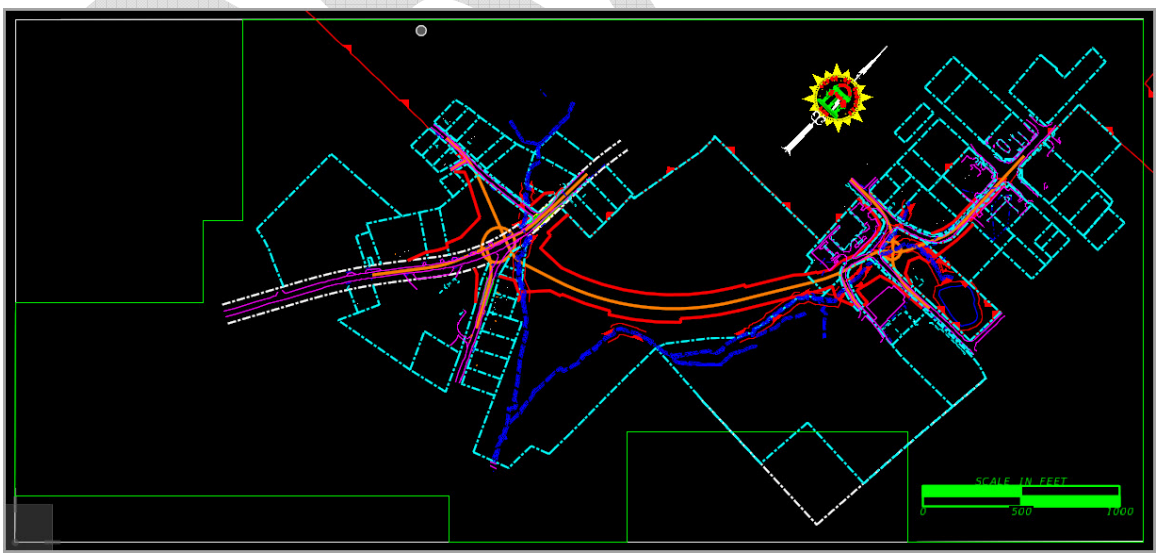
f. Group: None (for now)
g. ☑ Check on Create Drawing



6. The Boundary shape will be on the end of your cursor

♫ The Drawing Boundary should be a shape showing the area around the Construction Cover Sheet where the Map can be seen/fitted – this is a SR

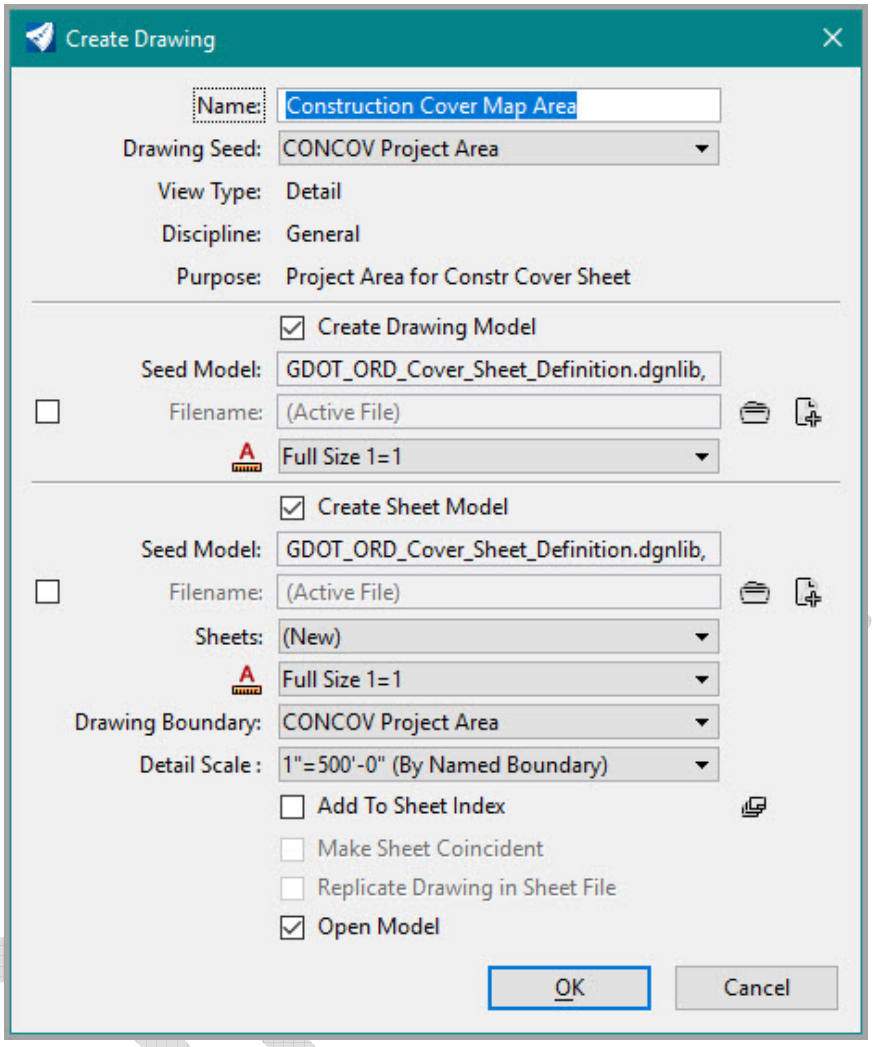
7. Position the Named Boundary outline to fit all the area to be placed on the Sheet by using the Cell 'Section_01_Clip_Boundary', aligning the edges as best as possible
8. Data Point to Accept



9. The Create Drawing dialog appears, all the items should be filled out, check that they are set as written and shown below:

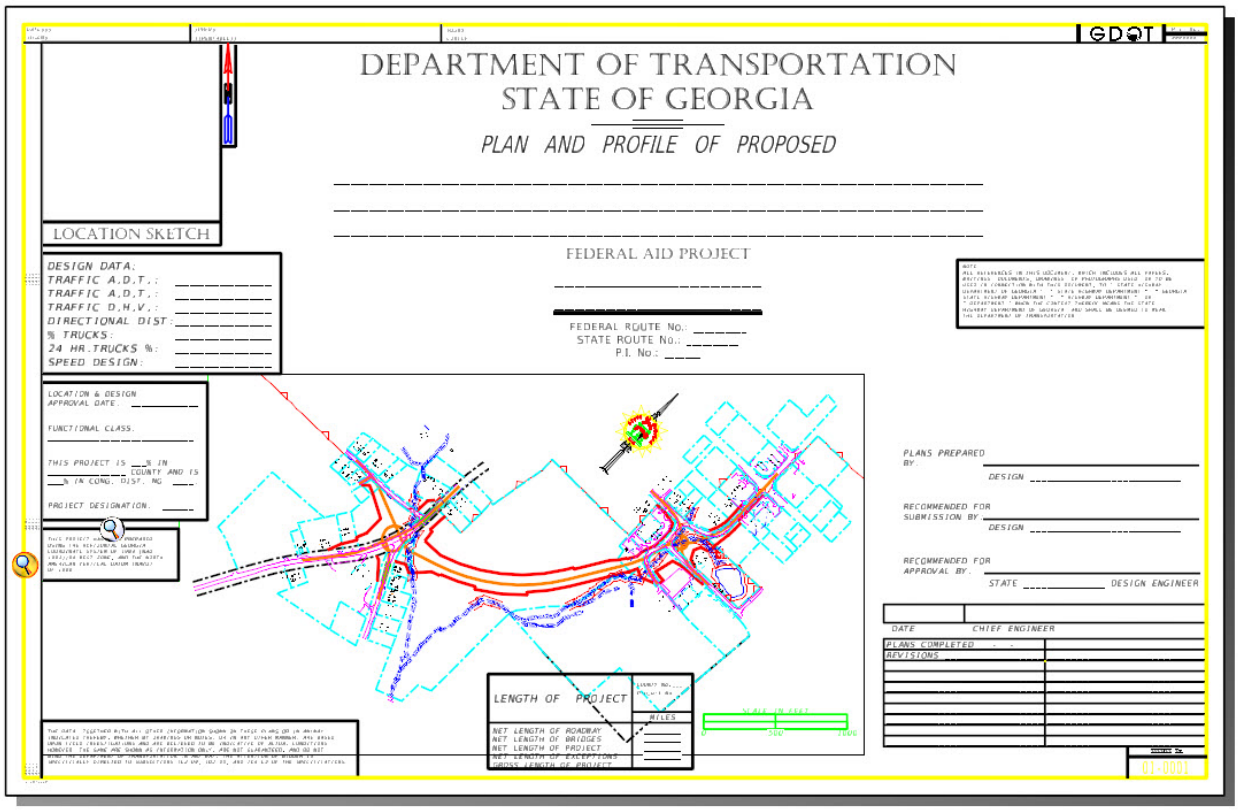
i. Name: Construction Cover Map Area
ii. Drawing Seed: CONCOV Project Area
iii. ☑ Create Drawing Model
iv. Seed Model: [Should be filled in]
v. Annotation Scale: Full Size 1=1
vi. ☑ Create Sheet Model
vii. Seed Model: [Should be filled in]
viii. Sheets: (New)
ix. Annotation Scale: Full Size 1=1
x. Drawing Boundary: CONCOV Project Area
xi. Detail Scale: 1"=500'-0" (By Named Boundary) – [this is set when you select the Detail Scale: in the Place Named Boundary dialog]
xii. ☐ Add to Sheet Index
xiii. ☐ Make Sheet Coincident
xiv. ☐ Replicate Drawing in Sheet File

xv. ☑ Open Model



10. Click OK
11. Wait…

12. The Sheet Model is created and opened

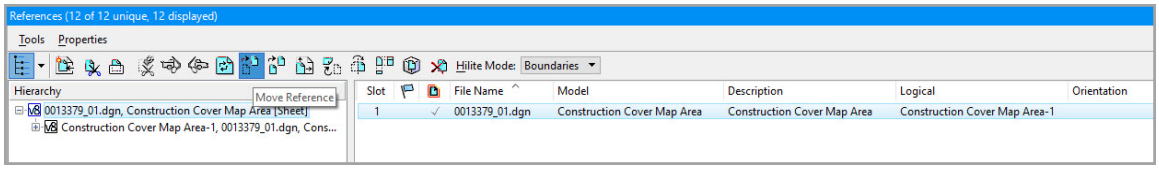


13. As you can see in the image above the Named Boundary line goes through some of the Construction Cover Sheet Text Boxes. To fix this you have to adjust the clip area of the Map – Until Bentley fixes an issue with shaped Drawing Boundaries you will have to do all of the following editing so that the text box areas on the Construction Cover Sheet are not blocked by the Map.

Adjust The Reference Files Position And Clip Area

Move The Reference Files:

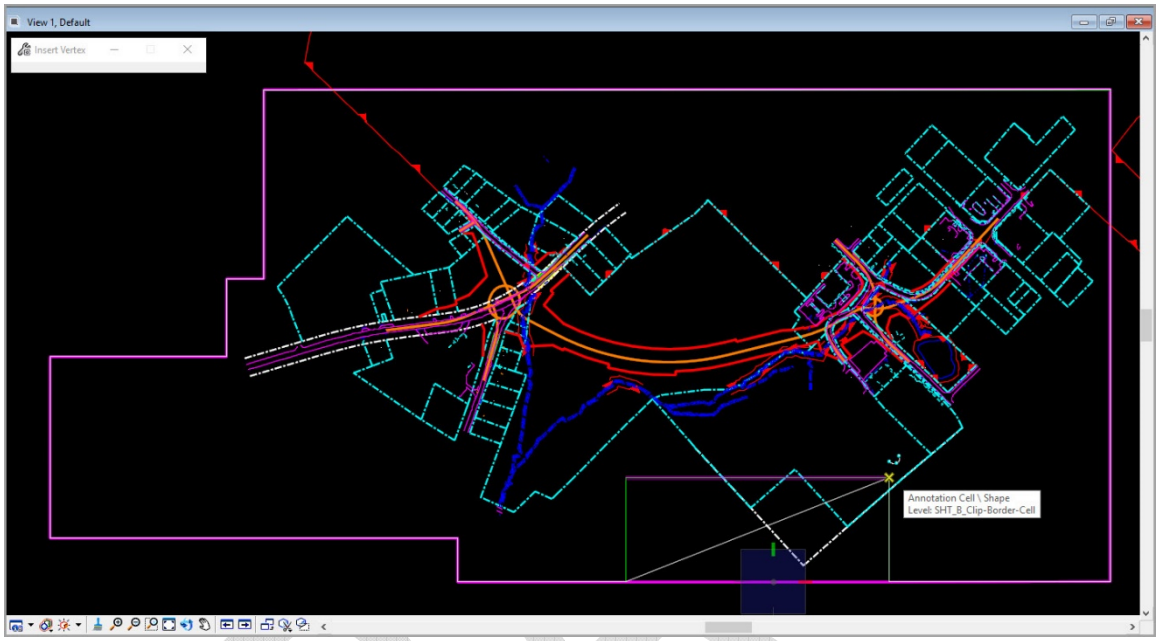
1. In the Sheet Model, in the Reference dialog select the first referenced file
2. Click the Move Reference icon



3. Move the References to the location on the Border that you want it

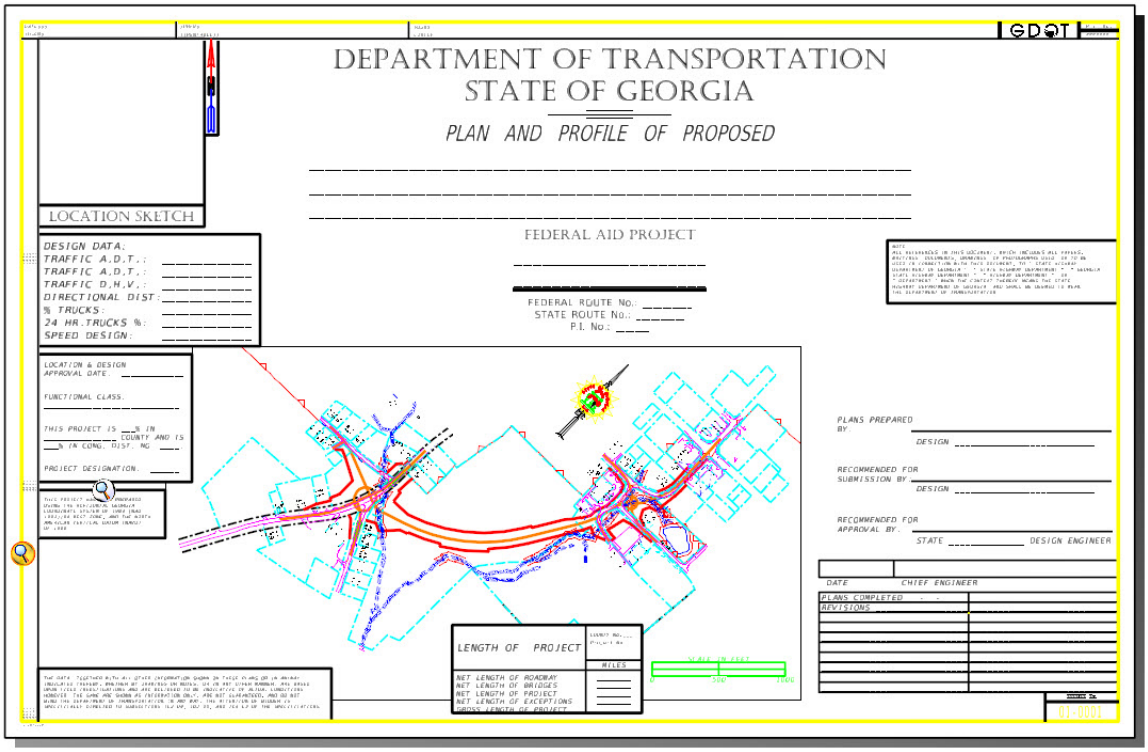
♫ Until the shape issue is corrected do the following steps

4. Go to the Default Model
5. Select the Add Vertex tool
6. Data Point on the Named Boundary Element to add vertexes to follow the shape of the Cell 'Section_01_Clip_Boundary'
7. Use the Modify Element tool as needed to move existing vertexes



8. Save the file

9. Go to the Sheet Model and the Text Boxes should now be clear of lines



10. Save Settings <Ctrl + F>
11. Save <Ctrl + S>

Create The .pdf For Plotting –

Set The Attributes Of The Sheet Model For Plotting:

1. ORD-CE Creates The Sheet Model and it will open with the Border attached and the Saved View that was just created
2. In the Sheet Models, check the References and Drawing Boundaries. Adjust them if you need to
3. Go to GDOT PDF Plotting > Setting Sheet Levels > Sheet Level Tools > 02 Sheet button – This will set the Levels of the border
4. Save Settings <Ctrl + F>
5. Go back to the Default Model if you need to create another Sheet Model to plot and repeat these steps for each Sheet Model needed
6. Once you have created all the Sheet Models that are needed Save the file and plot the Sheet Models
7. Save Settings <Ctrl + F>
8. Save <Ctrl + S>

Plot The Sheet Models:

1. Plot the Sheet Model(s) via GDOT Plotting Options >
    a. Single Sheet Model – Print via
    b. Multi Sheet Models – Print Organizer via
2. Save Settings <Ctrl + F>
3. Save <Ctrl + S>

Place The Location Sketch –

CREATING THE SECTION_02 .dgn FILE:

Create The Base Items –

Create The Spreadsheet:

1. Copy the spreadsheet 'Index Drawing Template.xlsx' to PW and place it in the 'DGN-CE' folder
    a. The spreadsheet must be located here
    b. We need to have this file as part of the folder creation process
2. Edit the spread sheet 'Section_02' according to the Project files
3. Save

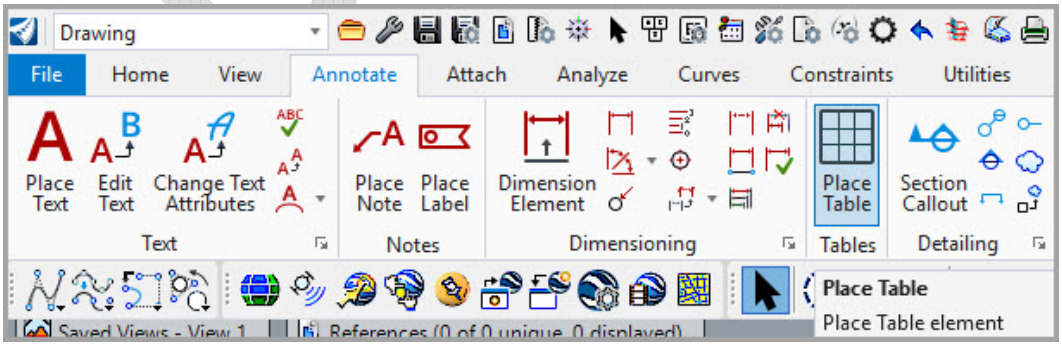
Create The .dgn File, If It Hasn't Been Already:

1. Create the .dgn file, #######_02.dgn
2. Set the Annotation Scale: Full Size 1=1
3. Select the Level, SHT_B_02-Index
4. Place the Cell 'GPLN_Index_Area' in the Default Model as many as you think you will need – You can add more later if needed
    a. This is where the Elements (graphics) that you want to place on the Sheets to plot will be contained at a 1:1 scale
    b. Make sure the Annotation Scale is at Full Size 1=1 -
    c. Place all the Cells, Elements inside the 'GPLN_Index_Area' Cell

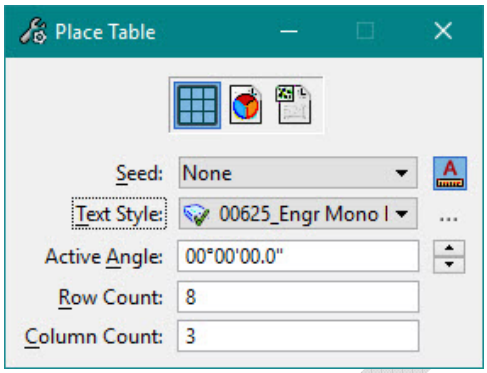
Create The Sheet Model –

Bring In The Worksheet Using the Place Table tool:

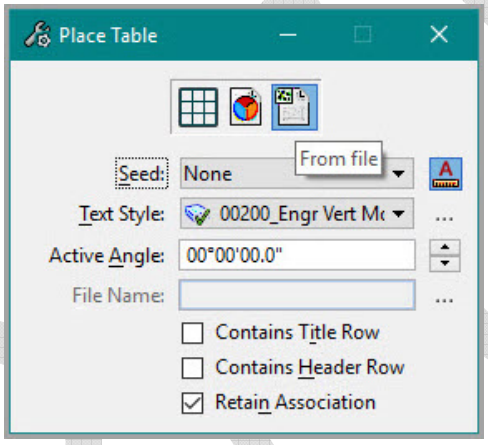
1. Go to Drawing > Annotate > Table > Place Table tool – It is also located here: OpenRoads Drawing Production > Drawing Production > Place Table



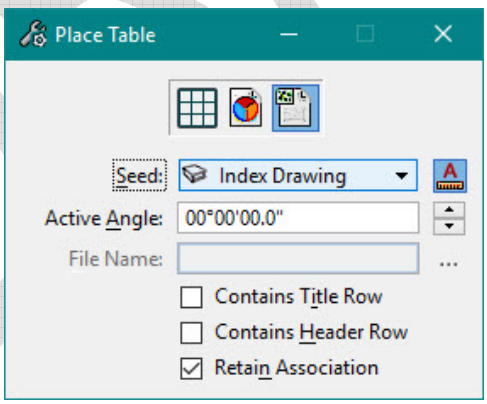
2. The Place Table dialog appears



3. Select the From File icon: This will (supposed to) keep the format of the spreadsheet

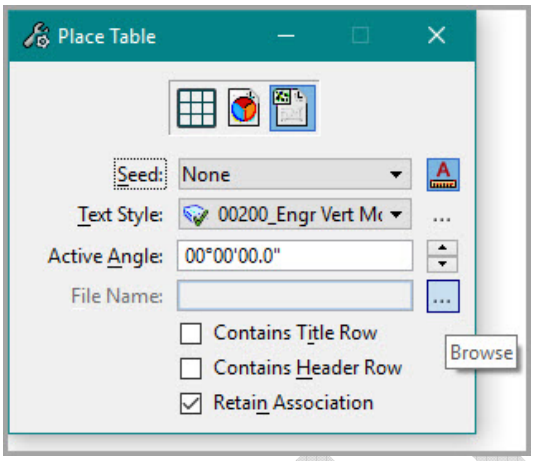


4. Select Seed: Index Drawing

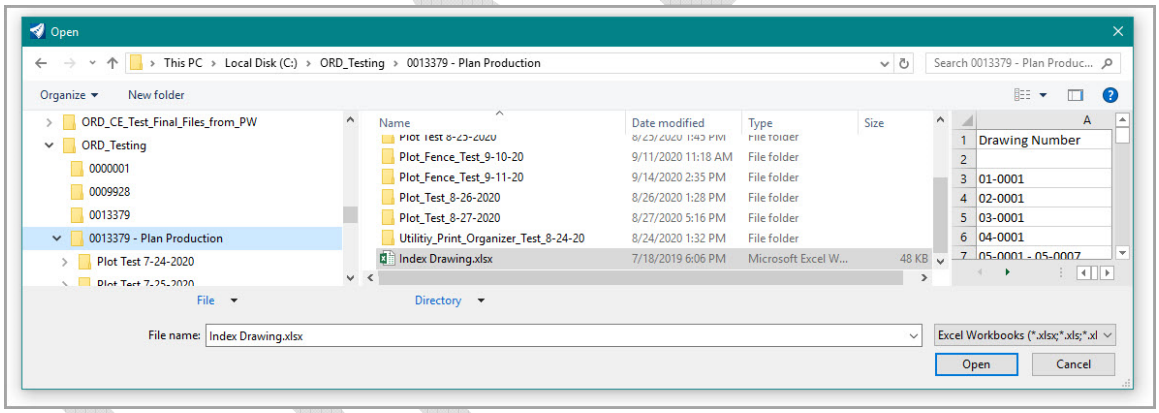


5. Active Angle: 00°00’00.0”
6. Leave Contains Title Row unchecked
7. Leave Contains Header Row unchecked
8. Leave Retain Association checked on so updating will work

9. Go back up and Click on the Browse icon next to the File Name setting

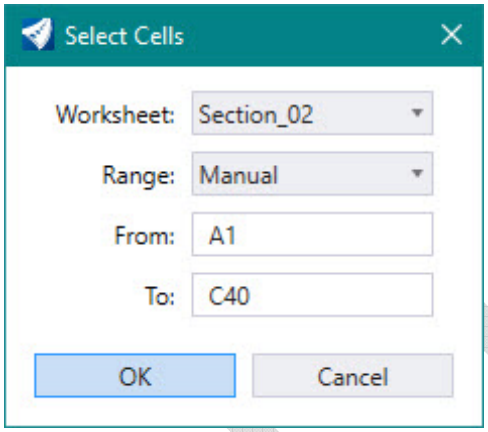


10. The File Open dialog opens
11. In the File Open dialog, browse to the folder where your Excel file is located, select the file, It takes a bit and the spreadsheet opens, go back to ORD-CE making it the active program and click Open

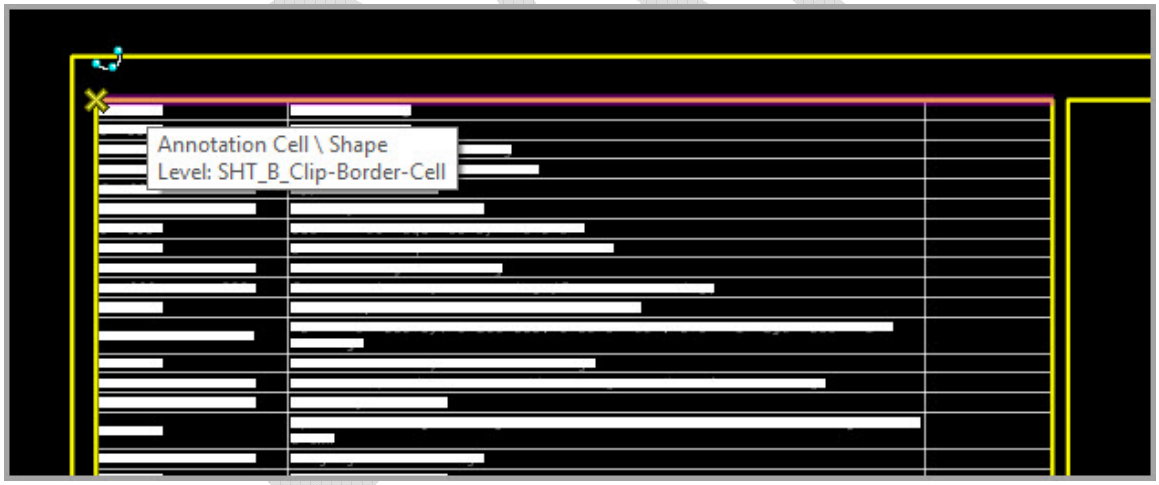


12. The Select Cells dialog opens (This sometimes pops up on the other monitor/screen)
13. Select the specific Worksheet for the Section you are creating
14. Select Manual from the Range: drop-down
15. The 'From:' and 'To:' sections are for defining the excel cell range to be placed. Each of the two areas in the Cell 'GPLN_Index_Area' will contain a range. The second range will start, From:, one number higher than the To: number in the previous Excel cell range placement. For example:
    a. First placement - From: A1, To: C40
    b. Second placement – From: A41, To: 80
    c. Etc…

16. These Excel cell range can be edited later so the To: number can be a guess. This is an example of the first area range.
    a. From: A1
    b. To: C40



17. Click OK, wait…..
18. When the spreadsheet appears on the cursor, Enter a Data Point to place the Table in the top Left corner of the inner rectangle of the Cell 'GPLN_Index_Area'. See image below

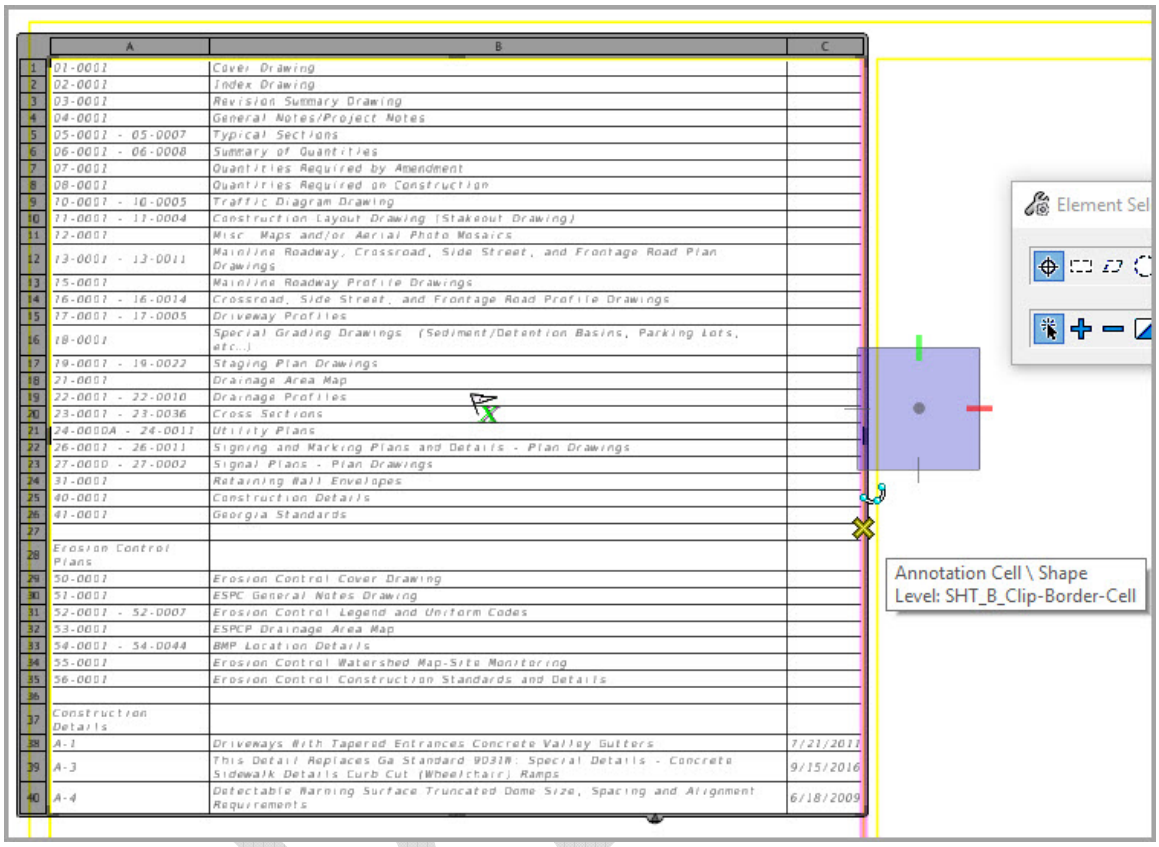


19. Save Settings <Ctrl + F>
20. Save <Ctrl + S>

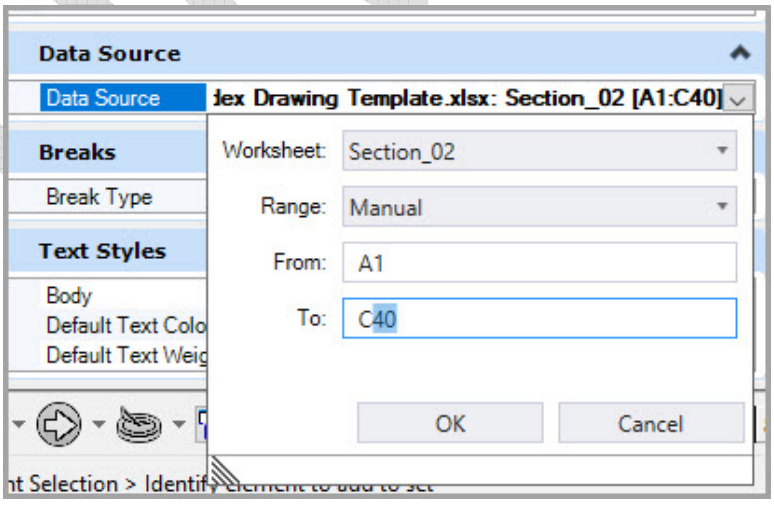
Edit The Table:

1. Select the Table, the Table Tools Tab appears

2. Grab the Left Table Handle and Drag it to the border of the area to fit the Table into the Cell Table Area, you may want to Zoom in



3. In the Properties dialog, go to the Data Source and Click on the Down Arrow, wait…..
4. In the To: input change the Row number to what you want

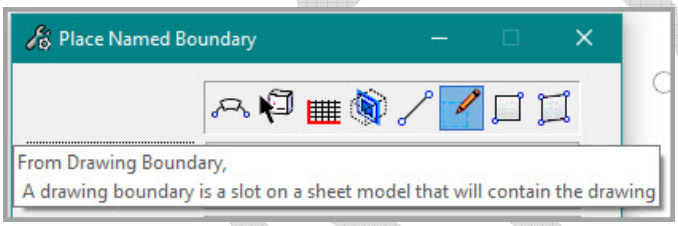


5. Click Ok, wait…..
6. Check the Left edge of the Table and see if it needs adjusting again
7. Continue to adjust the To: row number until you get it to the one that fits

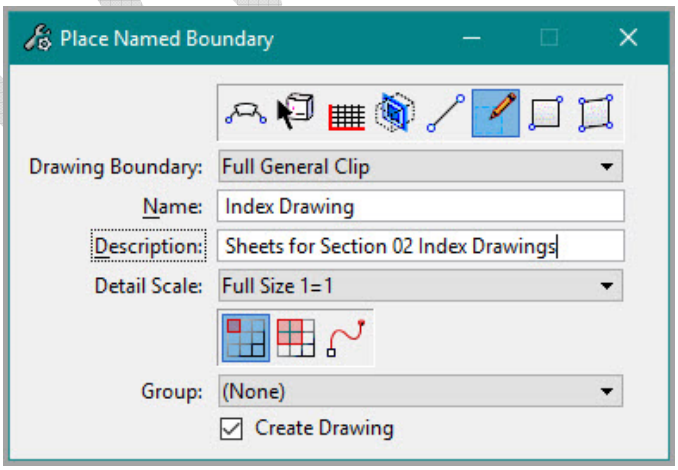
8. Data Click somewhere in the View Window to accept the changes
9. Go back to Step 5 to place more Tables so that all the information from the spreadsheet are in the Design Model

Place Named Boundary To Create The Sheet Models To Plot:

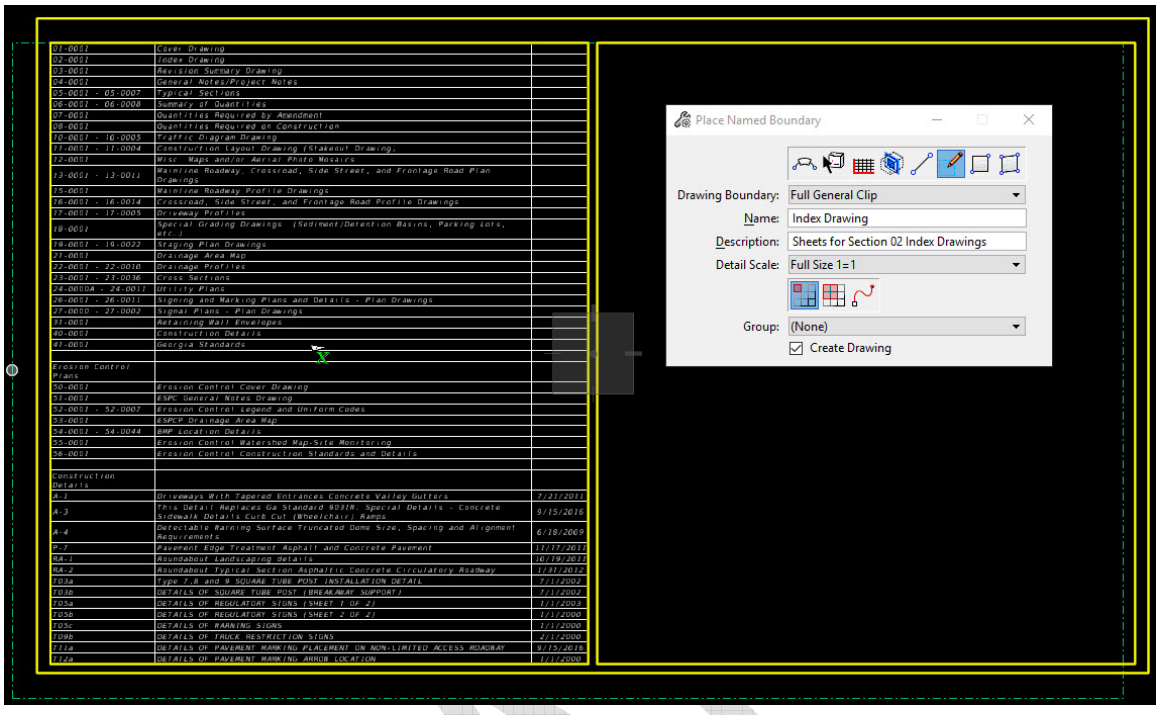
1. After placing all the Cells, 'GPLN_Index_Area' and filling them in with the information from the spreadsheet it is time to Create the Sheet Model(s)
2. Set the Level to Draft_Named_Boundary
3. Make sure the Annotation Scale is set to Full Size 1=1
4. Go to OpenRoads Drawing Production > Drawing Production > Named Boundary > Place Named Boundary
5. The Place Named Boundary dialog appears
6. Select the From Drawing Boundary icon



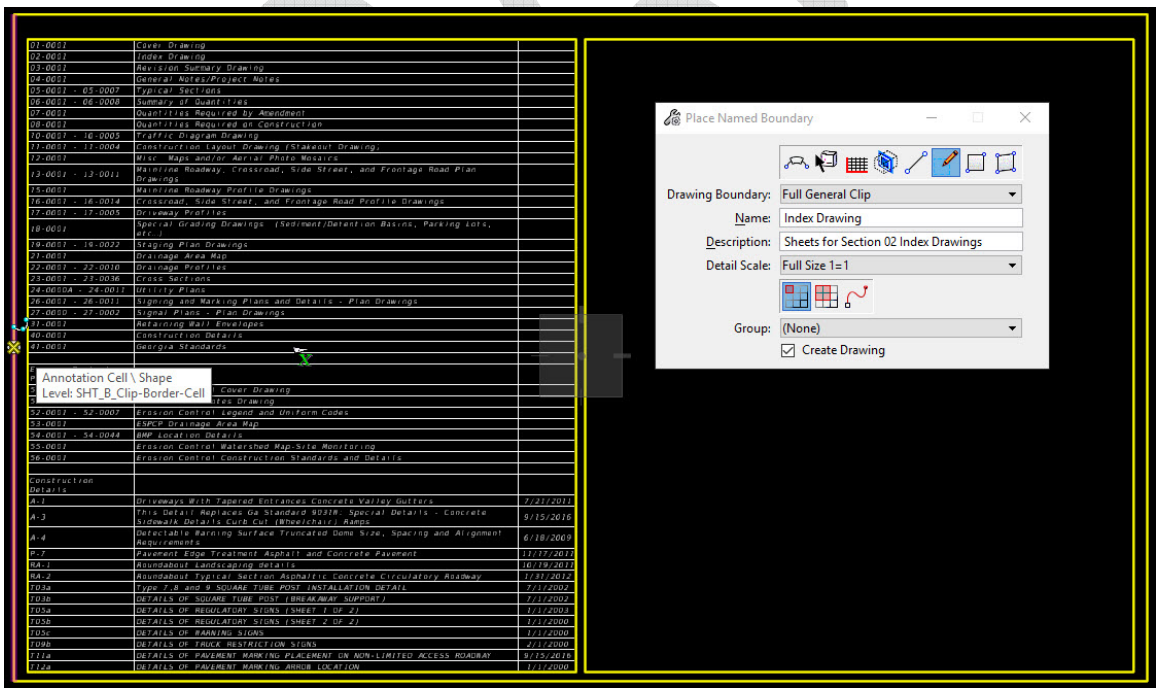
7. Fill out the following –
    a. Drawing Boundary: Full General Clip
    b. Name: Index Drawing
    c. Description: (suggestion like – Sheets for Section 02 Index Drawing)
    d. Detail Scale: Full Size 1=1
    e. Select the icon: Place One Named Boundary
    f. Group: None (for now)
    g. Check on Create Drawing



8. The Boundary shape will be on the end of your cursor



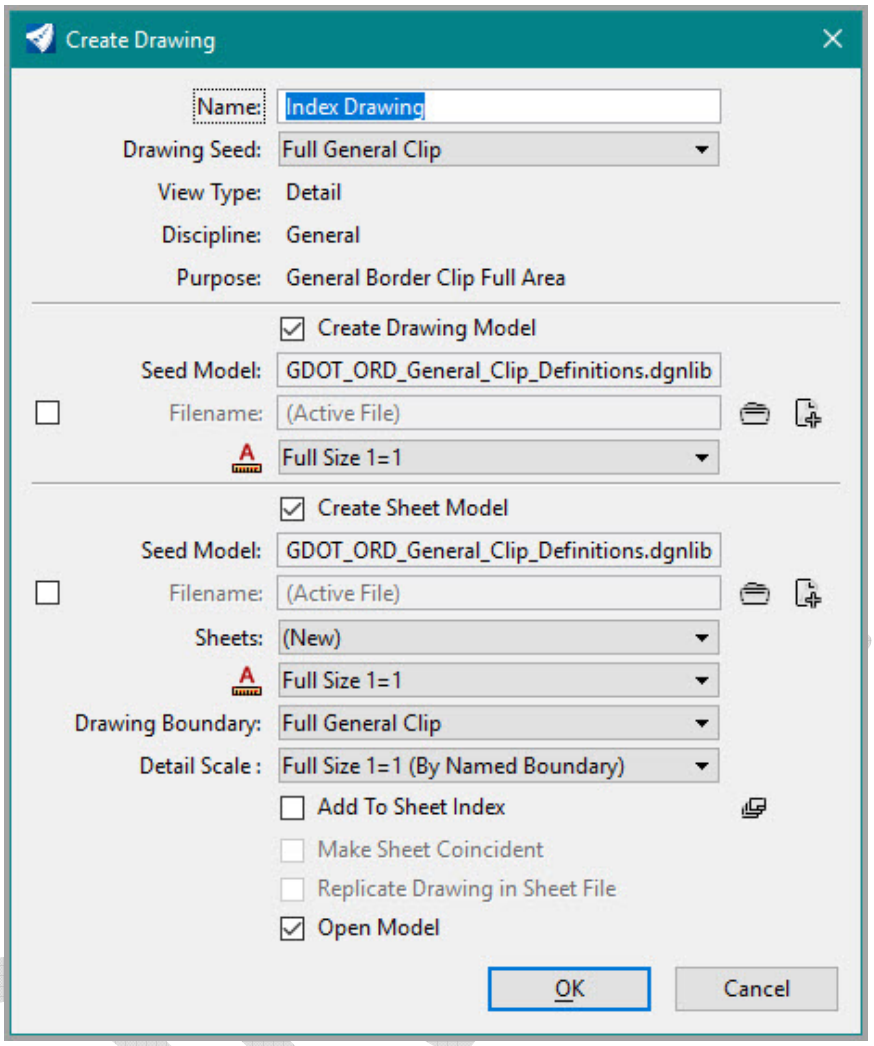
9. Place the boundary to fit all the area to be placed on the Sheet, Snap to the middle of the Right edge of the 'GPLN_Index_Area' Cell



10. Data Point to Accept
11. The Create Drawing dialog appears, all the items should be filled out, check that they are set as written and shown below:

i. Name: Should already be filled out from the Name you entered in the Place Named Boundary dialog
ii. Drawing Seed: Notes Quantities Area
iii. ☑ Create Drawing Model
iv. Seed Model: Should be filled in
v. Annotation Scale: Full Size 1=1
vi. ☑ Create Sheet Model
vii. Seed Model: Should be filled in
viii. Sheets: (New)
ix. Annotation Scale: Full Size 1=1
x. Drawing Boundary: Notes Quantities Area
xi. Detail Scale: 1"=10'-0" (By Named Boundary) – this is set when you select the Detail Scale: in the Place Named Boundary dialog
xii. ☐ Add to Sheet Index
xiii. ☐ Make Sheet Coincident

xiv. ☐ Replicate Drawing in Sheet File



12. Click OK
13. Wait…

Create The .pdf For Plotting –

Set The Attributes Of The Sheet Model For Plotting:

1. ORD-CE Creates The Sheet Model and it will open with the Border attached and the Saved View that was just created
2. Use the Level Manager to turn off the Levels that are not needed
    d. Right Click in the blue area listing all the Level and Select ‘All Off’
    e. In the Level Display Select the following Levels to turn on
        i. SHT_B_02-Index
        ii. SHT_B_ Legend-Logo-Scale
        iii. SHT_B_ Plot-Border-Inner-Line

iv. SHT_B_ Plot-Sub-Text
v. SHT_B_ Sheet-Outline-Line
vi. SHT_B_ Sheet-Outline-Text

3. Go back to the Default Model if you need to create another Sheet Model to plot
4. In the Sheet Models, check the References and Drawing Boundaries. Adjust them if you need to
5. Once you have created all the Sheet Models that are needed Save the file and plot the Sheet Models
6. Save Settings <Ctrl + F>
7. Save <Ctrl + S>

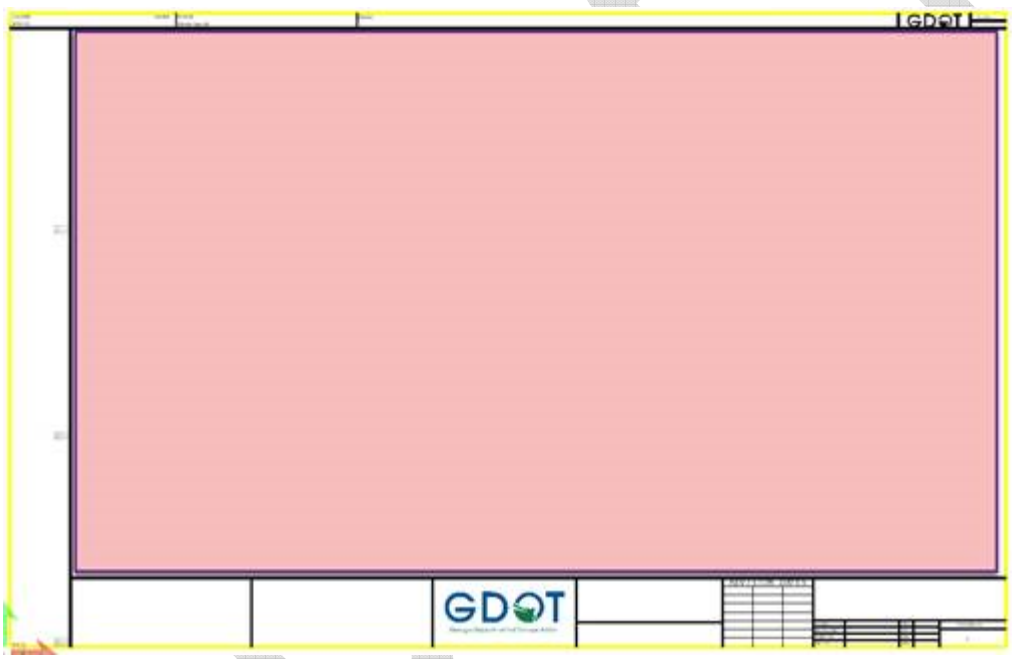
Plot The Sheet Models:

1. Plot the Sheet Model(s) via GDOT Plotting Options >
    a. Single Sheet Model – Print via
    b. Multi Sheet Models – Print Organizer via
2. Save Settings <Ctrl + F>
3. Save <Ctrl + S>

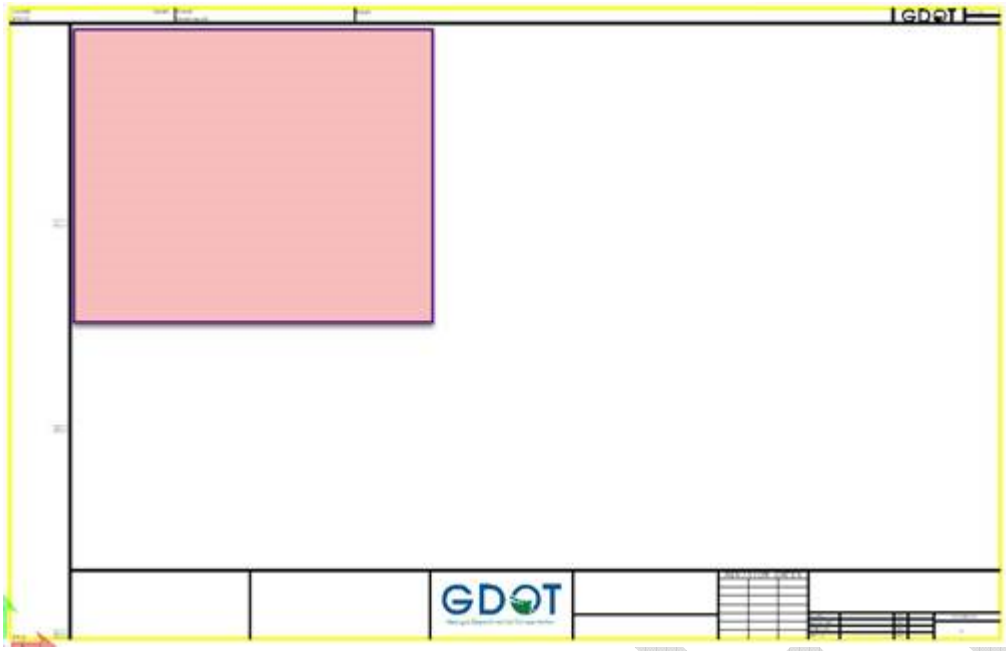
FUTURE ENHANCEMENTS:

I am doing some work on the Named Boundaries (GDOT_ORD_General_Clip_Definitions.dgnlib). I need to change the name for the Drawing Boundary 'Notes Quantities Area' to better reflect the area and uses. These are the predetermined areas for creating Sheet Models for non-Alignment sheets. I also want to allow for future uses and different possible areas. These are areas and other situations besides the automatic cutting of Sheet Models. In trying to plan for the future this is what I am thinking at this time. Please let me know your thoughts.

For using the whole area in the border: Full General Area (see shaded area in the image below)



For using the Top Left 6th area in the border: TL6 General Area (see shaded area in the image below)



And so on…. These specific Drawing Boundaries will probably be used by Bridge more than Roadway.